What is claimed is:

1. A character string recognition apparatus, comprising:

a key character code extraction unit automatically extracting a code string of a key word which is a node of a character string from a character string category to be recognized and expressed as a character code;

a key word extraction unit extracting a key word extracted by said key character code extraction unit or a part of the key word is extracted from a character string image; and

a recognition unit holistically recognizing character strings in partial areas determined by the extracted key words.

2. The apparatus according to claim 1, further comprising

a verification unit verifying a recognition result of the holistic recognition by said recognition unit.

3. The apparatus according to claim 1, wherein

when a key word is extracted from a character

string image, and when only a part of a character forming the key word is extracted, an extraction condition as a key character for preceding and subsequent characters is mitigated, and a character is re-extracted.

4. The apparatus according to claim 1, wherein when a key word is extracted from a character string image, and when leading and trailing characters in the characters in the key word, and more than a predetermined ratio of the characters forming the key word are extracted, said key word extraction unit regards a partial character string as a key word.

5. The apparatus according to claim 1, wherein when a key word is extracted from a character string image, when two or more separate characters are extracted in the characters forming the key word, and when more than a predetermined ratio of the characters in an area enclosed by the extracted characters, said key word extraction unit extracts the partial character string as a partial character string of the key word.

6. The apparatus according to claim 1, wherein when a key word is extracted from a character string image, said key word extraction unit performs a holistic recognizing process on an extracted key word or a partial key word, and verifies probability as a word.

7. The apparatus according to claim 1, wherein when a key word is extracted from a character string image, said key word extraction unit compares an area segmented as one character in character feature and word feature, and extracts a character string forming part of a key word or the key word.

8. The apparatus according to claim 1, wherein when a word is extracted using word feature of a key word from a character string image, said key word extraction unit enhances recognition precision in word recognition by referring to a dictionary in which a word easily misrecognized as a key word is entered as a similar word.

9. The apparatus according to claim 1, wherein when a code string of a key word which is a

node of a character string is extracted from a character string category, said key character code extraction unit extracts a character having a large number of occurrences in entire character strings to be recognized, a character having a large number of occurrences in a character string unit, and/or a set of closely associated characters as key words.

10. The apparatus according to claim 1, wherein

A character which is not easily misrecognized is entered in advance, and said key character code extraction unit extracts the entered character as a key character when a code string of a key word as a node of a character string from a character string category.

11. The apparatus according to claim 1, wherein

when a word area is holistically recognized, said recognition unit performs a word recognizing process, segments a character for the area, and recognizes the character so that a word recognition result can be determined when a character contained in the word recognition result is contained as n higher order and has a number of occurrences equal to or larger than a threshold in the character

recognition result.

12. The apparatus according to claim 2, wherein:

said recognition unit holistically recognizes a word area based on a word feature generated by combining character features;

said verification unit computes a division position of each character in a word image from a matching template, compares line density of a word image obtained at each division position with line density held by each character of a recognized word, and rejects a word recognition result when a sum of the line density, or a difference in a collation ratio is larger than a threshold.

13. The apparatus according to claim 2, wherein:

said recognition unit holistically recognizes a word area based on a word feature generated by combining character features;

said verification unit computes a division position of each character in a word image from a matching template, compares peripheral distribution of a word image obtained at each division position with peripheral distribution held by each character of a recognized word, and rejects a word

recognition result when a sum of the peripheral distribution, or a difference in a collation ratio is larger than a threshold.

14. The apparatus according to claim 2, wherein:

said recognition unit holistically recognizes a word area based on a word feature generated by combining character features;

said verification unit compares a number of characters in a recognized word is compared with a number of characters estimated from a word image, and rejects a word recognition result when a difference in the number of characters is larger than a threshold.

15. A character string recognition apparatus, comprising:

key character code extraction means for automatically extracting a code string of a key word which is a node of a character string from a character string category to be recognized and expressed as a character code;

key word extraction means for extracting a key word extracted by said key character code extraction means or a part of the key word is

extracted from a character string image; and

recognition means for holistically recognizing character strings in partial areas determined by the extracted key words.

16. A character string recognition apparatus, comprising:

a recognition target character string group storage unit storing a list of character strings in a category to be recognized; and

a key word determination unit searching said recognition target character string group storage unit for each character to obtain a number of occurrences of each character, defining a character having a large number of occurrences as a key character, and defining a character string having a large number of occurrences as a key word.

17. A character string recognition apparatus, comprising:

a key character/word storage unit storing a determined key character or key word; and

a key character/word extraction unit extracting a character string as a key word if a part of the character string in the key word is

extracted when a key character or a key word stored in said key character/word storage unit is extracted from a character string to be recognized.

18. A character string recognition apparatus, comprising:

a word recognition unit recognizing a word; and

a verification unit checking whether or not a recognition result of said word recognition unit is correct.

19. The apparatus according to claim 18, wherein

said verification unit verifies a recognition result based on line density or peripheral distribution.

20. A key word determining method, comprising the step of

obtaining a number of occurrences of each character in a list stored in advance based on the list of character strings in a category to be recognized, defining a character having a large number of occurrences as a key character, and defining a character string having a large number

of occurrences as a key word.

21. A character string recognizing method, comprising the steps of:

obtaining a number of occurrences of each character in a list stored in advance based on the list of character strings in a category to be recognized, defining a character having a large number of occurrences as a key character, and defining a character string having a large number of occurrences as a key word;

extracting the key character or the key word from a character string image to be recognized; and

recognizing a word for each area delimited by each key character or key word in the character string image to be recognized.

22. A computer-readable storage medium storing a program used to direct a computer to realize the functions comprising

obtaining a number of occurrences of each character in a list stored in advance based on the list of character strings in a category to be recognized, defining a character having a large number of occurrences as a key character, and

defining a character string having a large number of occurrences as a key word.

23. A computer data signal embodied in a carrier wave and representing a program that makes a computer to control interchanging data concerning a process included in a series of process flows with an external device, and the program making the computer execute the steps of:

obtaining a number of occurrences of each character in a list stored in advance based on the list of character strings in a category to be recognized, defining a character having a large number of occurrences as a key character, and defining a character string having a large number of occurrences as a key word;

extracting the key character or the key word from a character string image to be recognized; and

recognizing a word for each area delimited by each key character or key word in the character string image to be recognized.

24. A storage medium storing a program recognizing a character string image, said program comprising the processes of:

automatically extracting a code string of a key word which is a node of a character string from a character string category to be recognized and expressed as a character code;

extracting the extracted key word or a part of the key word from a character string image; and

holistically recognizing character strings in partial areas determined by the extracted key words.